IV Year B.Tech. CE-I Sem

(A70136) AIR POLLUTION AND CONTROL
(Elective -II)

UNIT – I
Air Pollution - Definitions, Scope, Significance and Episodes, Air Pollutants - Classifications - Natural and Artificial - Primary and Secondary air pollutants, Point, Line and Areal Sources of air pollution- Stationary and mobile sources. Effects of Air pollutants on man, material and vegetation: Global effects of air pollution – Green House effect, Heat Islands, Acid Rains, Ozone Holes etc.

UNIT – II
Meteorology and Plume Dispersion; Properties of atmosphere; Heat, Pressure, Wind forces, Moisture and Relative Humidity, Influence of Meteorological phenomena on Air Quality-wind rose diagrams. Lapse Rates, Pressure Systems, Winds and moisture, plume behavior and plume Rise Models; Gaussian Model for Plume Dispersion.

UNIT-III
Control of particulates – Control at Sources, Process Changes, Equipment modifications, Design and operation of control.
Equipment’s – Settling Chambers, Cyclone separators, filters, Dry and Wet scrubbers, Electrostatic precipitators.

UNIT – IV
Control of gaseous emissions - General Methods of Control of NOx and SOx emissions – In-plant Control Measures, process changes, dry and wet methods of removal and recycling – Adsorption – Absorption – Combustion.

UNIT – V
Air Quality Management – Monitoring of SPM, SOx; NOx and CO Emission Standards—Air sampling – Sampling Techniques – High volume air sampler – Stack sampling - Analysis of Air pollutants – Air quality standards – Air pollution control act.

TEXT BOOKS:

REFERENCE: